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ABSTRACT

Prospective employers and external accreditation agencies today expect preservice teachers to fully document their success in a teacher education program. Missouri Western State College (MWSC) moved from the "scrapbook" portfolio to the World Wide Web delivered electronic portfolio in three years. This paper explains why MWSC chose to bypass the CD (compact disc) delivered portfolio and move directly to a portfolio that is created using Netscape Composer. The paper discusses problems encountered with the electronic portfolio and how MWSC chose to resolve those problems. (Author/MES)

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Electronic Portfolios: Why? What? How?

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Abstract: Prospective employers and external accreditation agencies today expect preservice teachers to fully document their success in a teacher education program. Missouri Western State College moved from the "scrapbook" portfolio to the WEB delivered electronic portfolio in three years. This paper explains why MWSC chose to bypass the CD delivered portfolio and move directly to a portfolio that is created using Netscape Composer. The paper discusses problems encountered with the electronic portfolio and how MWSC chose to resolve those problems.

Why portfolios?

Several years ago the Department of Education at Missouri Western State College {MWSC} began hearing about portfolios. Students were urged to begin making a portfolio. Initially, "portfolio" was associated with a scrapbook that included "things" that had been saved and which could eventually be shown to a prospective employer. The early portfolios lacked organization and structure but they were used by prospective employers to help select beginning teachers and MWSC graduates did gain employment because they had a "portfolio."

Eventually the "things" became more refined so that an organized three-ring binder would include a resume, references, letters of recommendation, transcripts, educational philosophy, classroom management theory, personal goals plus lesson plans, unit plans, printed technology examples, assessments and personal reflections. Many portfolios included photos to illustrate examples of lessons and the congruency between what was being said and what the student teacher actually did in the classroom. Again this refined portfolio was informally done and was used only for employment purposes. Doty and Hillman {1997, p. 776} explain the early development of the preservice teacher technology portfolio.

What is a portfolio?

The MWSC faculty also began to refine the definition of what a portfolio really is. An excellent description is offered by Paulson, Paulson, and Meyer (1991). They describe a portfolio as "A purposeful, integrated collection of student work showing student effort, progress, or achievement in one or more areas. The collection is guided by performance standards and includes evidence of students' self-reflection and participation in setting the focus, selecting contents, and judging merit" (p. 295).

MWSC welcomed the idea of having students develop a teaching portfolio. It was believed that the completed portfolio would be a tangible collection of a student's best work that was a result of a complete and full teacher education program. The student portfolio would provide both faculty and school administrators with examples of what a student could do rather than merely rely upon a transcript of grades or formal evaluation forms. Though an examination

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of the portfolio an evaluator could begin to easily determine if there was a connection between philosophy and practice.

The department could assess the strengths and weaknesses in the teacher education program with student portfolios. Prospective employers could use the portfolio to help select first year teachers.

Early it was learned that the notebook portfolios were not ends in themselves but a working tool that students could use when reflecting about their knowledge, skills and attitudes about teaching. The new portfolios included the above items as well as an explanation of how and why each item in the portfolio illustrated good teaching. Exceptional student teachers simply began documenting their successes in the classroom and the college campus.. The development of the teaching portfolio easily became part of the MWSC field-based, performance-based, reflective model of teacher education.

A new meaning for "portfolio" was developed when it was learned that accreditation agencies as the National Council for the Accreditation of Teacher Education {NCATE}issued new guidelines for teacher preparation and would be using the new standards to assess the strengths of the MWSC Department of Education {Thomas, 1994} . Associated with the new guidelines was the idea of the electronic portfolio. Several major issues arose with this new use of the portfolio:

- where would the department store all of the three ring binders
- how would the department deal with the students who wanted to take their lesson plans, unit plans, assessments, etc. when leaving MWSC

The "notebook" portfolio no longer would be suitable for the new uses of the portfolio. Jackson {1997, p. 698} explains the trade-offs of the traditional portfolio vs. the electronic delivered portfolio.

How are portfolios produced?

Technology. "Why don't we just put the portfolios on a CD?" An easily stored electronic portfolio would solve all of the storage problems, allow the students to take their materials with them and could then be used by the students for employment purposes. Programs as HyperCard, SuperCard, Multimedia Director or HyperStudio could be used to develop non-linear links for the electronic portfolio. The CDs could be archived and easily used by external evaluators. The electronic CD portfolio would meet the needs of the department.

Reflection soon indicated, however, that the CD ROM electronic portfolio created as many problems as it solved. Once made, it would be difficult for a student to update the portfolio if the student no longer had access to the college provided software and hardware. Licensing or purchase of production software plus the necessary hardware would be very expensive. Incompatibility between the equipment at MWSC and the equipment in the area schools would make the CD useless to many students. Questions arose as to how many copies of the CD portfolio a student might need. Jackson {1997, p. 700} highlights the limitations of creating an electronic portfolio on a CD.

The idea of the CD electronic portfolio was quickly replaced with the WEB portfolio that could be developed using the HTML editor found with Netscape Communicator/Composer.

Netscape Composer was selected as the appropriate software because all computers in the departmental computer lab already had this gratis program. All students at MWSC already have a free Internet account through the college so each student has a place to house the electronic portfolio. Many students are connected to the college account via a modem so the electronic portfolio can be developed any of twenty-four hours per day. Netscape Communicator is a free program that can be downloaded so students can continue to update and revise the electronic portfolio after leaving the college. Other html editor programs might make it possible to produce a more elaborate WEB page; but, availability of the program after leaving MWSC again was the concern. With little technical knowledge a person can produce a very acceptable WEB page with Netscape Composer.

Earlier the idea of a floppy disk portfolio had been rejected because of the limited storage capacity of a disk. As the portfolios become more sophisticated and include video clips, the 1.3MB floppy definitely would not meet the needs of students.

A WEB based portfolio also would eliminate the problem of "how many CDs should I make?" An employment scenario might go like this: student visits a school superintendent with a brief resume that lists the URL [WEB location] of the electronic portfolio. The superintendent calls a school principal or department chair and says, "I think we have a person we might want to look at in depth. Please look at this candidate's WEB pages that contain the portfolio." Without the WEB portfolio the candidate must leave a CD and the school personnel must then shuffle the CD from one office to another or from one side of town to the other side of town. This can take several days. The WEB based portfolio eliminates the need to produce five or fifteen CDs that might be needed for employment purposes. The WEB delivered portfolio is available within minutes to prospective employers and on a twenty-four hour basis.

External program evaluators will also be able to review student portfolios prior to the arrival on campus, in their hotel room or when they are on the MWSC campus. Again, the Internet delivered portfolio reduces the need to orchestrate the moving of CDs from one evaluator to another.

All elementary education students at MWSC are required to take an instructional technology course. During this course students create two WEB pages: one using the manual inserting of html tags into a document and one using the HTML Netscape Composer editor. Production of the above WEB pages require students to become familiar with basic WEB page production and composition, image transfer, FTP, scanner software and digitization of photographic images. [Secondary education students, however, are not required to take the instructional technology course.]

The production of the WEB based portfolio becomes a logical extension and real-world application of skills previously learned in the required elementary education technology course. Many students are able to adapt previously developed WEB pages to the final electronic portfolio or they merely create a hyperlink to the earlier WEB pages.

The above plan was implemented during the fall semester of 1998. All fall student teachers were required to complete the electronic portfolio before the end of the semester. The secondary student teachers quickly and easily were able to complete the project using Netscape Composer. Composer eliminates the need to learn all of the necessary html tags.

As compared to the earlier "three-ring notebook" portfolios, it appears that the quality of the electronic portfolios has moved to the positive side of the ledger. The electronic portfolio has the potential of being viewed by a greater number of people. Thus, greater effort and pride was taken to create a public document. Today most prospective employers are interested in assessing a candidate's technology skills. The electronic portfolio easily allows this to happen.

The appropriate WEB pages that illustrate the Missouri Western plan are located at the following URLs:

- http://www.mwsc.edu/~edtech/webpage98.html
- http://www.mwsc.edu/~porr/port/webpres4.html

Results of the required electronic portfolio assignment

About the time we think one or two problems are solved new ones develop.

One major problem faced by the faculty was the idea of the electronic portfolio itself. Students had been told for several years to develop a "notebook" portfolio. Some students resist doing things a new way and saw the electronic portfolio as an infringement upon their time during a busy student teaching semester. Immediately the required elementary instructional media class will be adapted to insure that the basic format and structure of the electronic portfolio is completed prior to the student teaching semester. It was further noted that the required electronic portfolio required students to make a direct connection or integration of the knowledge and skills learned in the earlier technology class to a finished product that was part of another class. Earlier students had failed to connect "technology" to anything but the technology class. New ways of thinking had to emerge.

Students who did not have a home computer or who were student teaching a far distance from campus found it difficult to complete the final electronic portfolio. The assignment for these people required trying to get into a computer lab during the evenings or weekends. For the majority of the students, however, the WEB based portfolio was easier to complete when compared to a CD portfolio that used less available hardware and software.

Early in the semester "privacy" became an issue. Several students strenuously objected to having personal data, letters of recommendation, evaluations, etc. in the public domain or on all computers in the world. To counter this concern it was suggested that the student create a subdirectory that used a very unique name for the electronic portfolio URL. The URL would be available to only those people that the student chose to give it to.

Competition for employment can be very challenging. Several students expressed a concern about having their peers simply copy, wipe and paste html codes from someone else's electronic portfolio to a "new portfolio." The more technically skilled or motivated students

had a concern that the seemingly open portfolio would jeopardize their employment possibilities.

Computer literate students asked about aggressive search engines that can find almost any web page. Unless a student specifically registered a WEB page with a search engine it may take several months before the existence of the page is known to the world. [And by that time the student will be employed.] Because of the "privacy issue" no MWSC student produced WEB portfolio is available for viewing.[1]

The issues of privacy and plagiarizing will be resolved for the spring semester of 1999. Entry to all electronic portfolios will require a protected password.

For whatever reason it may, some students might zap the electronic portfolio before it can be viewed by program assessment evaluators {NCATE and Missouri State Department of Elementary and Secondary Education}. To insure availability two or three years in the future, all electronic portfolios will be converted to a CD that will become part of the departmental archive. A trained workstudy student is able to burn a CD in less than five minutes.

MWSC students have 5 megs of computer space for housing both email and WEB accounts. Some of the produced WEB pages are very elaborate with many graphics. This has resulted in several students exceeding their computer space allocation. After graduation the student loses this free account. The lack of space and the closing of the account were unanticipated problems. Each problem will be solved when the Department of Education sets-up its own server before the spring 1999 semester. The department will be able to store several years of electronic portfolios on the new server. MWSC will be able to continue to provide a service to its graduates by making the electronic portfolio available to prospective employers.

Students were encouraged to use photographs to visually present various parts of the portfolio. The department purchased digital cameras for this purpose. Digital cameras were quickly replaced with the student owned 35mm cameras and film. {Most students could not predict exactly "when" the best time to take pictures of classroom activities would be.} Thirty-five mm film can be developed and digitized for less than $10 per roll. The photos can then be ftped to the student web page file. Using student cameras eliminated the problems of not having enough digital cameras, record keeping, not having the camera right day and the eventual problems of having cameras used by so many people. Students with advanced computer skills can enhance photographs with programs as Photoshop.

Success

Three years ago the idea of "portfolio" caused alarm in our department. As the semesters go by we will continue to deal with additional problems that are yet to be faced. For the present time, however, the electronic portfolio created by Netscape Composer seems to have provided solutions to what seemed to be an insurmountable problem.

An overview of the MWSC Web Portfolio can be found at

- http://www.mwsc.edu/~porr/port/webpres4.html

[1] Preservice and Inservice Teaching Portfolios can be viewed at http://curry.edschool.virginia.edu/curry/class/edlf/589_004/sample.html

A word of caution: there is a distinct difference between an electronic portfolio that might be used by a student for employment purposes and the portfolio that will be required by NCATE and/or state agencies who are interested in program review. The production processes can be the same. A student might elect to duplicate some of the basic content but in all probability the majority of the portfolio will contain different information. The similarities and differences between the two types of portfolios are beyond the scope of this paper.

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